

Patent No. 6,730,730
Request for Cert. of Correction dated August 18, 2004
Attorney Docket No. 4020-012139

10031054 CofC \$

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Patent No. : 6,730,730 ~~01~~ Confirmation No. 8708
Inventor(s) : Hansen et al.
Issued : May 4, 2004
Title : Resin For A Mineral Wool Binder Comprising
The Reaction Product Of An Amine With A
First And Second Anhydride
Examiner : Katarzyna Wyrozewski Lee
Customer No. : 28289

Certificate
AUG 27 2004
of Correction

REQUEST FOR CERTIFICATE OF CORRECTION OF PATENT

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

ATTENTION: Decision and Certificate of Correction
Branch of the Patent Issue Division

Sir:

In accordance with 35 U.S.C. §§254 and 255, we attach hereto Form PTO/SB/44
and a copy of proof of errors and request that a Certificate of Correction be issued in the
above-identified patent. The following errors appear in the patent as printed:

1. Column 4, Line 62, Claim 1, "such as" should read --including--
(See Examiner's Amendment of 11-19-2003, Accompanying Notice of Allowance, Page 2, Paragraph 1., Claim 1, Line 2)
2. Column 5, Lines 1-2, Claim 2, "such as" should read --including--
(See Examiner's Amendment of 11-19-2003, Accompanying Notice of Allowance, Page 2, Paragraph 1., Claim 2, Line 2)
3. Column 5, Lines 4-5, Claim 3, "such as" should read --including--
(See Examiner's Amendment of 11-19-2003, Accompanying Notice of Allowance, Page 2, Paragraph 1., Claim 3, Line 2)
4. Column 5, Lines 54-55, Claim 13, "1-1 ethylisopropanolamine" should read
--1- ethylisopropanolamine --
(See Original Claim 28 in Preliminary Amendment of 01-15-2002, Page 5, Line 3. Claim 28 issued as Claim 13.)
5. Column 6, Lines 11-12, Claim 18, "carboxymethyl cellulose cellulose" should read
--carboxymethyl cellulose, cellulose--
(See Examiner's Amendment of 11-19-2003, Accompanying Notice of Allowance, Page 2, Paragraph 1., Claim 33 (which issued as Claim 18), line 4)

08/25/2004 AWONDAF2 00000023 6730730

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100.00 OP

{W0137490.1}

AUG 30 2004

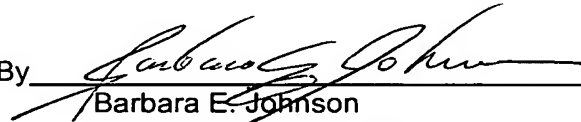
6. Column 6, Line 26, Claim 22, "g-hydroxyalkylamid" should read
-- β -hydroxyalkylamid--
(Our original Claim 31 on Page 5 of the Preliminary Amendment filed 01-15-2002 is also incorrect.) (See Original Claim 9 (which eventually issued as Claim 22), PCT application, Page 10, Line 15.
7. Column 6, Lines 35-36, Claim 24, , "carboxymethyl cellulose cellulose" should read
--carboxymethyl cellulose, cellulose--
(See Examiner's Amendment of 11-19-2003, Accompanying Notice of Allowance, Page 2, Paragraph 1., Claim 39 (which issued as Claim 24), line 4)

The errors numbered 4 and 6 are obvious typographical errors made by Applicant. A check for \$100.00 is attached to cover the fee for correction of Applicant's mistakes. The remaining errors are printing errors, except in the case of No. 5 and No. 7. In both of those instances, the Examiner's Amendment removed the "and" between carboxymethyl cellulose and cellulose. A comma (",") should have been inserted in place of "and" and was obviously an inadvertent omission by the Examiner.

Respectfully submitted,

WEBB ZIESENHEIM LOGSDON
ORKIN & HANSON, P.C.

By



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UNITED STATES PATENT AND TRADEMARK OFFICE CERTIFICATE OF CORRECTION

PATENT NO. : 6,730,730 *BI*

DATED : May 4, 2004

INVENTOR(S) : Hansen et al.

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Column 4, Line 62, Claim 1, "such as" should read --including--

Column 5, Lines 1-2, Claim 2, "such as" should read --including--

Column 5, Lines 4-5, Claim 3, "such as" should read --including--

Column 5, Lines 54-55, Claim 13, "1-1 ethylisopropanolamine" should read
--1- ethylisopropanolamine --

Column 6, Lines 11-12, Claim 18, "carboxymethyl cellulose cellulose" should read
--carboxymethyl cellulose, cellulose--

Column 6, Line 26, Claim 22, "g-hydroxyalkylamid" should read
-- β -hydroxyalkylamid--

Column 6, Lines 35-36, Claim 24, , "carboxymethyl cellulose cellulose" should read
--carboxymethyl cellulose, cellulose--

{W0137487.1}

MAILING ADDRESS OF SENDER:

The Webb Law Firm
700 Koppers Building
436 Seventh Avenue
Pittsburgh, PA 15219-1818

PATENT NO. 6,730,730 *BI*

No. of additional copies



This collection of information is required by 37 CFR 1.322, 1.323, and 1.324. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1.0 hour to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Attention Certificate of Corrections Branch, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

AUG 30 2004



UNITED STATES PATENT AND TRADEMARK OFFICE

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NOTICE OF ALLOWANCE AND FEE(S) DUE

7590
Barbara E Johnson
700 Koppers Building
436 Seventh Avenue
Pittsburgh, PA 15219-1818

11/19/2003

NOV 21 2003

EXAMINER

WYROZEBSKI LEE, KATARZYNA I

ART UNIT

PAPER NUMBER

1714

DATE MAILED: 11/19/2003

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY-DOCKET NO.	CONFIRMATION NO.
10/031,054	04/26/2002	Erling Hansen	4020-012139	8708

TITLE OF INVENTION: RESIN FOR A MINERAL WOOL BINDER COMPRISING THE REACTION PRODUCT OF AN AMINE WITH A FIRST AND SECOND ANHYDRIDE

APPLN. TYPE	SMALL ENTITY	ISSUE FEE	PUBLICATION FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1330	\$0	\$1330	02/19/2004

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE REFLECTS A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE APPLIED IN THIS APPLICATION. THE PTOL-85B (OR AN EQUIVALENT) MUST BE RETURNED WITHIN THIS PERIOD EVEN IF NO FEE IS DUE OR THE APPLICATION WILL BE REGARDED AS ABANDONED.

HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status is changed, pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above and notify the United States Patent and Trademark Office of the change in status, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check the box below and enclose the PUBLICATION FEE and 1/2 the ISSUE FEE shown above.

☐ Applicant claims SMALL ENTITY status.
See 37 CFR 1.27.

II. PART B - FEE(S) TRANSMITTAL should be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). Even if the fee(s) have already been paid, Part B - Fee(s) Transmittal should be completed and returned. If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

Notice of Allowability

Application No.

10/031,054

Examiner

Katarzyna Wyrozebski Lee

Applicant(s)

HANSEN ET AL.

Art Unit

1714

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to interview of 11/13/2003.
2. ☒ The allowed claim(s) is/are 16-45.
3. ☐ The drawings filed on _____ are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
- * Certified copies not received: _____.
5. ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
 - (a) ☐ The translation of the foreign language provisional application has been received.
6. ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application. **THIS THREE-MONTH PERIOD IS NOT EXTENDABLE**

7. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
8. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No. _____.
 - (b) ☐ including changes required by the proposed drawing correction filed _____, which has been approved by the Examiner.
 - (c) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No. _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the margin according to 37 CFR 1.121(d).

9. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|---|
| 1 <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 5 <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2 <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6 <input checked="" type="checkbox"/> Interview Summary (PTO-413), Paper No. _____ |
| 3 <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No. _____ | 7 <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4 <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit of Biological Material | 8 <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9 <input type="checkbox"/> Other |

Katarzyna Wyrozebski Lee
Primary Examiner
Art Unit: 1714

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mrs. Barbara Johnson on November 13, 2003.

The application has been amended as follows:

- Claim 1, line 2 delete term "such as" and insert term "including"
- Claim 2, line 2 delete term "such as" and insert term "including"
- Claim 3, line 2 delete term "such as" and insert term "including"
- Claim 29, line 1 delete term "such as" and insert term "including"
- Claim 30, line 4 delete term ", and silicone oils: and insert term "and" between "oils" and "minerals"
- Claim 33, line 4 delete first occurrence of the term "and"
- Claim 35, line 1 delete term "such as" and insert term "including"
- Claim 36, line 4 delete term ", and silicone oils: and insert term "and" between "oils" and "minerals"
- Claim 39, line 4 delete first occurrence of the term "and"
- Claim 44, line 1 delete term "such as" and insert term "including"

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of :
Erling HANSEN : RESIN FOR A MINERAL WOOL BINDER
Povl NISSEN : COMPRISING THE REACTION PRODUCT
Thor HUSEMOEN : OF AN AMINE WITH A FIRST AND
Dirk A. W. STANSSENS : SECOND ANHYDRIDE
International Application :
No. PCT/EP00/06978 :
International Filing Date :
07 July 2000 :
Priority Date Claimed :
16 July 1999 :
Serial No. Not Yet Assigned :
Filed Concurrently Herewith :

Pittsburgh, Pennsylvania
January 15, 2002

PRELIMINARY AMENDMENT

Box PCT
Commissioner for Patents
Washington, D.C. 20231

Sir:

Prior to initial examination, please amend the above-identified patent application as follows:

IN THE SPECIFICATION:

On page 1, after the title, please insert the following section heading:

BACKGROUND OF THE INVENTION

1. Field of the Invention

28. The resin according to claim 23, wherein the amine is a N-substituted beta hydroxy alkylamine selected from the group consisting of ethanolamine, 1-ethylethanolamine, 1-methylethanolamine, n-butyl-ethanolamine, 1-ethylisopropanolamine, 1-methylisopropanolamine, 3-amino-1,2-propanediol, 2-amino-1,3-propanediol, tris(hydroxymethyl)aminomethane, and diethanolamine.

29. The binder for mineral fibers such as glass or stone wool comprising the resin according to claim 16.

30. The binder according to claim 29, further comprising an accelerator and one or more resin additives selected from the group consisting of aminopropyl siloxane, thermal stabilizers, UV stabilizers, surface active compounds, fillers, silicates, magnesium sulfate, hydrophobising agents, oils, minerals, and silicone oils.

31. The binder according to claim 30, wherein the accelerator is selected from the group comprising sodium phosphinate, phosphinic acid, citric acid, adipic acid and g-hydroxyalkylamid.

32. The binder according to claim 29, further comprising one or more additives selected from the group comprising monosaccharides, disaccharides, and polysaccharides.

33. The binder according to claim 32, wherein the monosaccharides, disaccharides, and polysaccharides are one or more selected from the group consisting of sucrose, glucose syrup, modified starch, starch urea dicyandiamid, polyglycols, acrylics, furfural, carboxymethyl cellulose and cellulose, or polyvinyl alcohol.

34. The binder according to claim 29, wherein the binder has been cured.

35. The binder for mineral fibers such as glass or stone wool comprising the resin according to claim 23.

RESIN FOR A MINERAL WOOL BINDER COMPRISING THE REACTION
PRODUCT OF AN AMINE WITH A FIRST AND SECOND ANHYDRIDE

BACKGROUND OF THE INVENTION

1. Field of the Invention

PA The invention relates to a compound or salts thereof suitable for use as a binder for mineral fibres, i.e. men made vitreous fibres (MMVF), for example glass slag or stone wool, i.e. mineral wool, in particular Rockwool, a binder composition comprising such a compound, a process for providing said compound and composition, a mineral fibre product provided with such a binder and the use of said compound and composition as a mineral fibre binder.

PA 10 2. Description of the Related Art Phenol and formaldehyde resins which are mainly used as binders for glass or stonewool release toxic substances during curing, for example formaldehyde.

During application and curing of the binders, after provision thereof to the mineral fibres, phenol, 15 formaldehyde and ammonia are released. From an environmental point of view this is undesirable.

Furthermore during application, mostly by spraying, of the binder onto the spun glass or stone fibres a large amount of binder is lost, which is almost 20 impossible to recover for re-use.

A formaldehyde and phenol free resin suitable for a binder for mineral wool fibres is described in the patent application PCT/NL99/00029 from the applicant.

PA 25 SUMMARY OF THE INVENTION According to a first aspect of the present invention there is provided a resin for a binder suitable for mineral fibres such as glass or stone wool ~~according to claims 1-6.~~

The inventors have found that the resin obtained on mixing together different cyclic anhydrides, 30 preferably an aliphatic anhydride and an aromatic anhydride in a polymer free mixture with an amine,

see original
claim 9
which
is used as
claim
22

7. Binder for mineral fibres such as glass or stone wool, said binder comprising a resin according to any of the claims 1-6.

8. Binder comprising a resin according to claim 7 further comprising an accelerator and one or more resin additives such as aminopropyl siloxane to improve adhesion to glass, thermal and UV stabilizers, surface active compounds, fillers such as clay, silicates, magnesium sulfate and pigments such as titanium oxide, hydrophobising agents such as fluorine compounds, oils, minerals and silicone oils.

9. Binder according to claim 8 wherein the accelerator is selected from the group comprising sodium phosphinate, phosphinic acid, citric acid, adipic acid and β -hydroxyalkylamid.

10. Binder according to claims 8 or 9 wherein the additives are selected from the group comprising mono-, di-, and polysaccharides, such as sucrose, glucose syrup, modified starch, starch urea dicyandiamid, polyglycols, acrylics, furfural, carboxymethyl cellulose and cellulose, or polyvinyl alcohol.

11. Binder according to any of the claims 7-10 or resin according to any of the claims 1-6, wherein the concentration of aliphatic anhydrides is greater than the concentration of aromatic anhydrides.

12. Binder for mineral fibers, particularly mineral wool comprising a resin according to any of the preceding claims 1-6, which has been cured.

13. Mineral fibre product, specifically a mineral wool product, bound by a cured binder according to claim 12, or claims 7-11.

14. Process for providing a polymer free resin for a binder suitable for binding mineral fibre products, said process comprising the steps of mixing together under reaction conditions an amine with a first anhydride and a second different anhydride, these preferably being an aliphatic, cyclic anhydride and a cyclic aromatic anhydride respectively.

Application No. 10/031,054
Amendment dated September 8, 2003
Reply to Office Action of March 7, 2003
Attorney Docket No. 4020-012139

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No. : 10/031,054
In Re Application of : Erling HANSEN, et al.
Filed : April 26, 2002
Title : **RESIN FOR A MINERAL WOOL
BINDER COMPRISING THE REACTION
PRODUCT OF AN AMINE WITH A FIRST AND
SECOND ANHYDRIDE**
Group Art Unit : 1714
Examiner : Katarzyna Wyrozebski Lee

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

AMENDMENT

Sir:

In response to the Office Action, dated March 7, 2003, Applicants hereby submit the accompanying Petition for Extension of Time and the following Amendments and Remarks.

Amendments to the Claims are reflected in the listing of claims, which begin on page 2 of this paper.

Remarks/Arguments begin on page 9 of this paper.

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to Commissioner for Patents, P. O. Box 1450, Alexandria, VA 22313-1450 on September 8, 2003.

Patricia S. Cunningham
(Name of Person Mailing Paper)

auth'd
examiner's
amendment
see
✓
13 03

8

(13) Claim ~~28~~ (previously presented): The resin according to claim ~~28~~, wherein the amine is a N-substituted beta hydroxy alkylamine selected from the group consisting of ethanolamine, 1-ethylethanolamine, 1-methylethanolamine, n-butyl-ethanolamine, 1-1-ethylisopropanolamine, 1-methylisopropanolamine, 3-amino-1,2-propanediol, 2-amino-1,3-propanediol, tris(hydroxymethyl)aminomethane, and diethanolamine.

EA (14) Claim ~~29~~ (previously presented): The binder for mineral fibers ~~such as~~ ^{including} glass or stone wool comprising the resin according to claim ~~16~~.

14

" (15) Claim ~~30~~ (previously presented): The binder according to claim ~~29~~, further comprising an accelerator and one or more resin additives selected from the group consisting of aminopropyl siloxane, thermal stabilizers, UV stabilizers, surface active compounds, fillers, silicates, magnesium sulfate, hydrophobising agents, oils, ^{and} minerals, ~~and silicone oils~~.

15

(16) Claim ~~31~~ (currently amended): The binder according to claim ~~30~~, wherein the accelerator is selected from the group consisting of ~~comprising~~ sodium phosphinate, phosphinic acid, citric acid, adipic acid and g-hydroxyalkylamid.

14

(17) Claim ~~32~~ (currently amended): The binder according to claim ~~29~~, further comprising one or more additives selected from the group ~~comprising~~ consisting of monosaccharides, disaccharides, and polysaccharides.

17

EA (18) Claim ~~33~~ (currently amended): The binder according to claim ~~38~~,
wherein the monosaccharides, disaccharides, and polysaccharides are one or more selected
from the group consisting of sucrose, glucose syrup, modified starch, starch urea
dicyandiamid, polyglycols, acrylics, furfural, carboxymethyl cellulose, ~~and~~ cellulose, ~~or~~ and
polyvinyl alcohol.

14

(19) Claim ~~34~~ (previously presented): The binder according to claim ~~29~~,
wherein the binder has been cured.

" (20) Claim ~~35~~ (previously presented): The binder for mineral fibers ^{including} ~~such as~~ ✓
glass or stone wool comprising the resin according to claim ~~29~~.

20

EA (21) Claim ~~36~~ (previously presented): The binder according to claim ~~35~~, further
comprising an accelerator and one or more resin additives selected from the group consisting
of aminopropyl siloxane, thermal stabilizers, UV stabilizers, surface active compounds,
fillers, silicates, magnesium sulfate, hydrophobising agents, oils, ^{and} ~~minerals, and silicone oils.~~ ✓

21

(22) Claim ~~37~~ (previously presented): The binder according to claim ~~36~~,
wherein the accelerator is selected from the group comprising sodium phosphinate,
phosphinic acid, citric acid, adipic acid and g-hydroxyalkylamid.

20

(23) Claim ~~38~~ (previously presented): The binder according to claim ~~35~~, further comprising one or more additives selected from the group comprising monosaccharides, disaccharides, and polysaccharides.

23

EA (24) Claim ~~39~~ (currently amended): The binder according to claim ~~38~~, wherein the monosaccharides, disaccharides, and polysaccharides are one or more selected from the group consisting of sucrose, glucose syrup, modified starch, starch urea dicyandiamid, polyglycols, acrylics, furfural, carboxymethyl cellulose ~~and~~ cellulose, ~~or~~ and polyvinyl alcohol.

20

(25) Claim ~~40~~ (previously presented): The binder according to claim ~~35~~, wherein the binder has been cured.

(26) Claim ~~41~~ (previously presented): The mineral fiber product bound by a cured binder according to claim ~~29~~.¹⁴

(27) Claim ~~42~~ (previously presented): The mineral fiber product bound by a cured binder according to claim ~~35~~.²⁰

(28) Claim ~~43~~ (previously presented): A method for providing a polymer free resin for a binder suitable for binding mineral fiber products, said process comprising the steps of mixing together under reaction conditions an amine with a first aliphatic cyclic anhydride and a second aromatic cyclic anhydride.